UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,980	12/01/2003	Radoslav Danilak	NVID-P000817	4928

7590   05/15/2006

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EXAMINER
LEE, CHUN KUAN

ART UNIT	PAPER NUMBER
2181	

DATE MAILED: 05/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/725,980	DANILAK, RADOSLAV
	Examiner	Art Unit	
	Chun-Kuan (Mike) Lee	2181	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _31 January 2006_.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-20_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-20_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _01 December 2003_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.
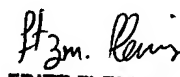
Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some *   c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Supervisory

FRITZ FLEMING
PRIMARY EXAMINER 3/10/2007
GROUP 2100

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments filed 01/31/2006 have been fully considered but they are

not persuasive. Claims 1-20 are currently pending for examination.

2.   In responding to applicant's argument that appears to be directing towards

independent claims 1, 9 and 14 regarding the claimed invention comprising the

"enabling the disk controller to hide the start up latency of the disk drive," on page 8, 3rd

paragraph. Applicant's argument has fully been considered, but is not found to be

persuasive.

        The argued limitation regarding the "enabling the disk controller to hide the start

up latency of the disk drive" is not recited in the independent claims 1, 9 and 14, and

furthermore, even though said argued limitation appears to be recited in the dependent

claims 6, 12 and 18, the scope of the limitation does not match, as the claimed limitation

for the dependent claims 6, 12 and 18 recited "to reduce" while said argued limitation

recited "to hide."

3.   In responding to applicant's argument directed towards independent claims 1, 9

and 14 rejected under 35 U.S.C. § 103 that <u>Schmidt</u> does not appear to be directed in

any particular fashion to the transfer of data through hard drive protocols, disk controller

communication procedures, or the like and that <u>Schmidt</u>'s teaching appears to have

nothing to do with disk transaction or the preparation of disk transaction information, on

page 9, 1st paragraph. Applicant's argument has been fully considered, but is not found

to be persuasive.

Schmidt teaches a computer communication system (Fig. 2, ref. 100) comprising

the storage device (Fig. 2, ref. 195), wherein said storage device comprises a hard drive

having one or more operating system (OS), device drivers and other applications (col. 8,

ll. 36-52). Therefore, in order for the computer communication system to be operational,

the data comprising the OS, the device drives and other applications in the hard drive

must be transferred to the processor, wherein the transfer of data from the hard drive

must be implemented conforming to the hard drive protocol, therefore would require to

properly package the data to be transferred in the data structure conforming to said

hard disk protocol, wherein said requirement to properly package the data to be

transferred is similar to the packaging of data to be transferred between the software

modem and the central station, as data are transferred to the protocol layer (Fig. 1, ref

80) then to the physical layer (Fig. 1, ref. 70) and finally to the central system (Fig. 1)

4.   In responding to the applicant's argument directed towards independent claims 1,

9 and 14 rejected under 35 U.S.C. § 103 that there is no description within Chisholm of

the transfer of a command to cause the startup of a disk drive coupled to the disk

controller and the subsequent implementation of a disk I/O from the disk controller, on

page 10, lines 1-3. Applicant's argument has fully been considered, but is not found to

be persuasive.

Chisholm teaches a computer system (Fig. 1) comprising the transferring of the

command blocks (Fig. 3, ref. 301) from the host processing side (Fig. 3, ref. 110) to the

local processing side (Fig. 3, ref. 120), wherein the local processing side comprises the

storage device (Fig. 1, ref. 114), wherein prior to the transferring the command blocks, a

command transfer start signal is transferred to cause the startup of the storage drive

(Fig. 1, ref. 114) coupled to the local interface controller (Fig. 1, ref. 113) as the

command blocks commence to be transferred into the local memory associated to the

storage device (col. 5, ll. 23-58), wherein it is well known to one skilled in the art that

commands comprising the read command and the write command are issued by the

processor to the storage device, therefore it would be obvious that the command blocks

comprises the read command and the write command, and the local interface controller

would receive and use the command block to control the storage device (col. 2, ll. 19-

45).

5.   In responding to applicant's argument directed towards independent claims 1, 9

and 14 rejected under 35 U.S.C. § 103 that there is no description within Chisholm of

the hiding of the start up latency of the disk drive, on page 10, lines 8-9. Applicant's

argument has fully been considered but is found not to be persuasive.

The claimed limitations recited in the independent claims 1, 9 and 14 does not

address "to hide the start up latency of the disk drive," and please further note that said

claimed limitation appears to be addressed in the dependent claims 6, 12 and 18, but

there appears to be a mismatch between the recited claimed limitation in the dependent

claims 6, 12 and 18, comprising "to reduce," and the limitation recited in the argument, comprising "to hide." Further more, Chisholm's invention intended to reduce the overhead associated with the transferring of the command blocks and assign the interrupt associated with the command blocks with the highest priority (col. 2, II. 36-48), as a result, the start up latency of the storage drive would be reduced.

6.   In responding to applicant's argument that there is no motivation to combine a host processor-local processor transfer scheme of Chisholm with a software controlled modem of Schmidt to obtain functionality of the claimed invention, on page 10, 2nd paragraph. Applicant's argument has fully been considered, but is found not to be persuasive.

In Schmidt's computer communication system, the storage device stores the necessary data that the processor is required to access, wherein the necessary data comprises of OS, device drivers and other applications (Schmidt, col. 8, II. 36-52), and further more, Chisholm specifically teaches that data comprising the OS would be loaded into the host memory to be executed by the processor (Chisholm, col. 3, I. 49-67). By combining Chisholm with Schmidt, the start up for transfer of data can be quicker as the transfer of the command blocks from the host processing side to the local processing side is more efficient (Chisholm, col. 2, II. 36-51). Upon responding to all of applicant's arguments in detail above, the examiner reiterates his rejections of claims 1-20 in detail below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set
forth in section 102 of this title, if the differences between the subject matter sought to be patented and
the prior art are such that the subject matter as a whole would have been obvious at the time the
invention was made to a person having ordinary skill in the art to which said subject matter pertains.
Patentability shall not be negatived by the manner in which the invention was made.

7.   Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Schmidt et al. (US Patent 6,842,803) in view of Chisholm et al. (US Patent 5,968,143).

8.   As per claims 1 and 14, Schmidt teaches a computer system method (Figure 2),

comprising of:

a processor (reference number 105, Figure 2);

a system memory coupled to the processor (reference number 115, Figure 2);

a (north) bridge component coupled to the processor (reference number 110,

Figure 2);

a storage device (reference number 195, Figure 2) coupled to the (south) bridge

component (reference number 130, Figure 2); and

preparing data (disk) transaction information by packaging a plurality of data

structures comprising the data (disk) transaction (reference numbers 70, 80, Figure 1).

Schmidt fails to teach specifically a disk controller coupled to the bridge

component for controlling said storage device, wherein said disk controller included a

plurality of bypass registers;

transferring a command from the processor to the disk controller, the command

causing a start up of a disk drive coupled to the disk controller;

transferring the disk transaction information to the bypass register of the disk

controller; and

implementing a disk I/O, wherein the disk controller processes the disk

transaction information to control the disk drive.

Chisholm teaches a computer system method comprising of:

a (disk) controller coupled to the bridge component for controlling the storage

device (disk drive) (reference numbers 111, 113, 114, Figure 1), wherein said (disk)

controller included a plurality of (bypass) registers (reference number 203, Figure 3);

transferring a command (block) from the processor to the (disk) controller

(reference number 304, Figure 3), the command obviously will cause a start up of the

storage device (a disk drive) coupled to the (disk) controller;

transferring the command block (disk transaction information) to the (bypass)

register of the (disk) controller (reference numbers 203, 304, 307, 309, Figure 3); and

obviously implement a (disk) I/O, wherein the (disk) controller processes the

command block (disk transaction information) to control the storage (disk) drive.

It would have been obvious to one of ordinary skill in this art, at the time of

invention was made to respectively implement the transfer of command block to and the

control of Chisholm's controller and storage device into Schmidt's computer system

method. Doing so add and further expand Schmidt's computer system method by

reducing the overhead and therefore the latency associated with the transferring of

command blocks from the processor to the controller (Chisholm, column 2, lines 19-51

and column 9, lines 53-59).

9.   As per claim 2, please see claim 1 in view of Schmidt and Chisholm.

Chisholm further teaches the computer system method comprising of:

preparing the command blocks (disk transaction information) by using the

processor of the computer system (column 5, lines 23-27); and

transferring the command block (disk transaction information) from the processor

to the (disk) controller (column 5, lines 34-67 and column 6, lines 1-8).

10.   As per claim 3, please see claims 1-2 in view of Schmidt and Chisholm.

Chisholm further teaches accessing a bus coupled to the (disk) controller to

transfer the control block (disk transaction information) from the processor to the disk

controller (reference number 130, Figure 3).

11.   As per claim 4, please see claims 1-3 in view of Schmidt and Chisholm.

Chisholm further teaches accessing of the (north and south) bridge component

controlling the bus coupled to the storage device (disk controller) (reference number

111, Figure 1); and

transferring the command block (disk transaction information) from the processor

to the (disk) controller via the bridge component (Figure 3).

12.   As per claim 5, please see claims 1-4 in view of <u>Schmidt</u> and <u>Chisholm</u>. <u>Schmidt</u>

further teaches the bridge component is a South bridge of the computer system

(reference number 130, Figure 2).

13.   As per claims 6-8, please see claim 1 in view of <u>Schmidt</u> and <u>Chisholm</u>.

        <u>Chisholm</u> further teaches the computer system method comprising:

        wherein the transferring of the command block to the (disk) controller, obviously

cause the start up of the storage device (disk drive), is configure to reduce latency for

data transfer between the processor and the storage device (column 2, lines 19-51 and

column 9, lines 53-59), therefore would obvious reduce a start up latency of the storage

device (disk drive);

        wherein the command block (disk transaction information) includes a plurality of

PRD (physical region descriptor) data structures (reference number 311, Figure 3) and

a plurality of command blocks (CPB (command parameter block) data structure) for

implementing the disk transaction (reference number 304, Figure 3); and

        <u>Schmidt</u> further teaches the computer system method comprising the storage

device (disk drive) is compatible with a version of the ATA standard (column 7, lines 1-

4).

14.   As per claims 9-13, please see claims 1-8 in view of <u>Schmidt</u> and <u>Chisholm</u>.

        <u>Schmidt</u> further teaches accessing a North bridge to transfer the data (disk

transaction information) (reference number 110, Figure 2); and

transferring the data (disk transaction information) from the processor to the

storage device (disk controller) via the North bridge and the South bridge of the

computer system (reference number 110, 130, Figure 2).

15.   As per claim 15, please see claims 1-14 in view of <u>Schmidt</u> and <u>Chisholm</u>.

16.   As per claim 16, it would be obvious to integrate the disk controller into the bridge

component in order to reduce cost and size.

17.   As per claims 17-20, please see claims 1-14 in view of <u>Schmidt</u> and <u>Chisholm</u>.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time
policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE
MONTHS from the mailing date of this action. In the event a first reply is filed within
TWO MONTHS of the mailing date of this final action and the advisory action is not
mailed until after the end of the THREE-MONTH shortened statutory period, then the
shortened statutory period will expire on the date the advisory action is mailed, and any
extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of
the advisory action. In no event, however, will the statutory period for reply expire later
than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Chun-Kuan (Mike) Lee whose telephone number is
(571) 272-0671. The examiner can normally be reached on 8AM to 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Fritz M. Fleming can be reached on (571) 272-4145. The fax phone number
for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

C.K.L
05/09/2006

Supervisory

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